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Washington State Production

Landing bottomfish at a rate of 4 million pounds a month, Washington's otter trawl and long line fleet may establish a new record this year for the taking of sole, flounder, cod, ocean perch and rockfish.

In 1954 a total of 46,000,000 pounds of those varieties with a processed value of $4,813,000 was landed. The catch, which was worth $3,008,000 to the fishermen, has been exceeded only once since the bottom fishery reached large-scale proportions in the mid-1930's.

Most of the increase has resulted from a strong market for true cod, the species most preferred by processors of the new fish stick products. Last year's true cod catch totaled 15,407,000 pounds, nearly double the 1953 landings.

The otter trawls, numbering 116 boats, caught their fish over a 700-mile area extending from the Columbia River to Southeast Alaska. A total of 13,800,000 pounds was landed from Hecate Strait; 11,400,000 pounds from the waters off Vancouver Island; 10,900,000 pounds from off the coast of Washington; and the remainder from Puget Sound.

Bellingham and Anacortes processors received 21,300,000 pounds, with 20,000,000 pounds going to Seattle and the remainder to Everett and coastal ports.

Cruise Report of the "Yellowfin"

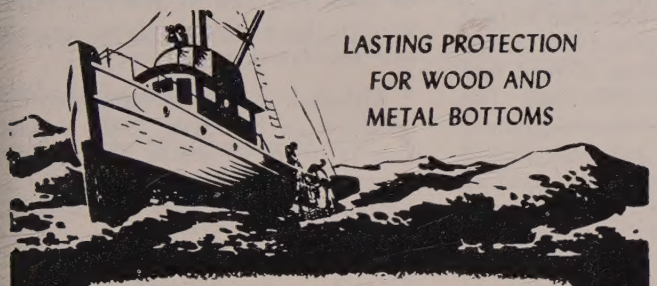
Cruise 2 of the M. V. "Yellowfin" for 1955 sailed March 7 from Los Angeles Harbor and returned March 21. Locality covered was the area along the California coast from Avila to San Diego and portions of Santa Rosa, Santa Cruz, and Santa Catalina Islands.

This was the first of two 1955 cruises to assess the abundance of sardines, anchovies, and mackerel in California waters during the spring months. On the first half of the cruise preliminary experiments were run on electrofishing with the hope of ultimately obtaining a device which will be of value in collecting fish samples at sea. Although far from conclusive, our preliminary work appeared encouraging.

Following our experimental work in Los Angeles Harbor, 49 light stations were occupied between San Luis Obispo Bay and San Diego. Hauls with the blanket net resulted in 14 samples of northern anchovy, one sample of sardines and one sample of Pacific mackerel. The anchovies were taken over the entire range of the cruise; sardines were taken in the San Diego area, and Pacific mackerel in the Los Angeles Harbor area. In addition to these, the blanket net captured sauries (7 stations), jack smelt (9 stations), top smelt (4 stations) and grunion (7 stations).

A total of 590 miles were traveled scouting for fish and a total of 141 schools were seen either visually or with the aid of the sea scanar. Of the schools sighted 84 were estimated to be anchovy, 28 saury and 8 squid. The remaining 21 schools were unidentified though many of these were probably anchovy.

The heaviest concentrations of schools were encountered between Port Hueneme and Santa Barbara in the north and between Oceanside and Dana Point in the south. Although no scouting nights were lost, operations throughout the cruise were hampered somewhat by rather heavy swells and during the early part of the cruise by several hours of bright moonlight each night.



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Production of Canned Fishery Products

THE pack of canned fishery products in the United States, Alaska, American Samoa, Hawaii, and Puerto Rico in 1954 amounted to 867,986,000 pounds, valued at $331,027,000 to the packers. This was an increase of 10% in volume and 8% in value compared with the previous year.

Increased packs of tuna, sardines, salmon, and fish packed for pet food were responsible for the gain in production. Record packs of tuna and pet food were canned during the year.

The pack of tuna and tunalike fishes exceeded that of any other item in both volume and value in 1954. The canned production of these fish amounted to 10,889,000 standard cases (214,454,000 pounds), valued at $142,149,000. This was an increase of 1,309,000 standard cases, and $15,891,000 compared with 1953.

The value of the tuna pack was 54% greater than that of the second place salmon. During 1954 tuna was packed in seven states, American Samoa, Hawaii, and Puerto Rico. This was the first year these fish were canned in American Samoa.

The 1954 pack of canned salmon amounted to 4,163,000 standard cases (199,831,000 pounds), valued at $92,281,000 to the canners. This was an increase of 6% in volume and 11% in value compared with the previous year. The largest pack of sockeye salmon in the Puget Sound area since 1913, and an unusually large pack of chum salmon in southeastern Alaska, were responsible for the gain.

Pacific sardines returned to southern California waters in 1954 after an almost complete absence the previous two years. The catch of 133 million pounds was used to produce a pack of 1,333,000 standard cases (59,969,000 pounds), compared with less than 64,000 cases in 1953. Had there been a market for additional supplies of canned sardines, it is estimated that the pack could have been doubled.

The pack of Maine sardines amounted to 2,935,000 standard cases (59,579,000 pounds), valued at $18,153,000 to the packers. Compared with the previous year, this was an increase of 5% in volume and 7% in value.

The packs of Pacific and jack mackerel declined sharply in 1954 compared with the previous year. The decreases were caused by inability of fishermen to locate schools of these fish. A reduction of over 50% in the pack of anchovies was caused by a lack of a market for these fish in the Philippines where most of the pack had been sold in recent years.

Both the packs of oysters (446,000 standard cases), and shrimp (935,000 standard cases) were nearly 10% less than in 1953.

The 1954 production of fishery byproducts in the United States, Alaska, American Samoa, and Puerto Rico was valued at $81,571,000—10% more than in the previous year. The production of fish meal amounted to 256,915 tons, valued at $32,748,000—a new record. The production of meal was nearly 18,000 tons more than in the previous year, and 13,000 tons above the previous 1936 record production. The volume of feed material produced in 1954 was far larger than in 1936 since the production in that year included 23,482 tons of menhaden acid scrap used as fertilizer. No acid scrap was manufactured in 1954. The production of menhaden meal in 1954 amounted to 183,091 tons—a new record.

A total of 6,513 tons of Pacific sardine meal was produced during the year—65,369 tons more than in the previous year, but only 5% of the record yield of this meal (121,739 tons) which occured in 1936 when the sardine fishery was at its peak. In addition to the fish meal produced for animal feed, 57,886,000 pounds of homogenized condensed fish and 172,173,000 pounds of condensed fish solubles were also manufactured for use in mixed animal feeds.

The production of marine animal oils in the United States and Alaska during 1954 amounted to 22,144,000 gallons, valued at $13,136,000 to the producers. This was an increase of 9% in volume compared with 1953, but was only 55% of the record 1936 production when 39,902,000 gallons of oil were produced. ★

Uncle Sam's "Flying Fish"

William C. Herrington, Special Assistant to the Under Secretary of State, has been spending most of his time on fishing matters in compiling a world traveling record almost equal to that of Secretary of State Dulles. During the past year he has been in South America, Central America, Canada, Japan, Korea, England, Denmark, Norway, Iceland, and a few other countries.

Between trips he has attended many fishery meetings throughout the United States and meetings at the United Nations General Assembly in New York. The problems he has been working with are highly specialized and require patience and salesmanship. Fishery interests are high in their praise of Bill Herrington.

Tagging Petrale Sole

An expedition to tag petrale sole from the "Esteban Deep" off the west coast of Vancouver Island was completed by the U.S. Fish and Wildlife Service exploratory fishing vessel *John N. Cobb*, April 1. The operation was conducted in cooperation with the State of Washington Department of Fisheries and the Fisheries Research Board of Canada to obtain information on the migratory habits of these fish and to assist in determining the need for giving petrale sole regulatory protection.

Although rough seas hampered the handling of live fish, 2,000 petrale sole from the "Esteban Deep" were tagged with either American or Canadian tags and were released in good condition. Most of the tagged petrale sole were released on the surface. However, in an effort to determine a means of reducing the high mortality rate experienced in previous tagging operations, some of them were lowered to the bottom of the sea in a metal cage which automatically released the fish on the bottom.

Since the discovery of petrale sole in "Esteban Deep" at depths as great as 1,200 feet in 1953, record catches of this highly prized bottom fish have been taken from there by American fishermen. It is believed by fishermen and scientists alike that petrale sole congregate in this area to spawn and are a part of stocks fished on other grounds during other times of the year.

An additional 450 petrale sole were tagged in an area about 45 miles southwest of Cape Flattery. These fish are also a congregation of spawners and are likely to represent stocks fished on other grounds.

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About This Issue . . .

Never a dull moment in the tuna industry. Last month we announced the San Diego settlement of a price dispute and people going back to work there. This month San Pedro takes the spotlight in a different vein.

*

It's the bothersome old problem of Japanese imports that has everybody stirred up in the San Pedro-Wilmington-Terminal Island area. You can read all about it in "Tuna Imports Reach Crisis," on page 20. There's also some background material in the "Report from Washington" on page 7.

Other phases of the same basic problem are covered in "A Letter and Some Recommendations," by Harold Cary on page 10. The San Diego Chamber of Commerce also gets into the act with some forceful facts and figures on page 12.

*

A POFI meeting was held at Terminal Island last month. Experts from Honolulu joined with experts from Washington, D. C., in an interesting powwow. The FWS men told about their research and other activities, while representatives of the various branches of the tuna industry listened and asked pertinent questions.

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FWS Annual Report

"A realistic conservation program to preserve our resources for tomorrow must be based upon continuous research," Director John L. Farley stated in the Fish and Wildlife Service's annual report for fiscal year 1954.

Major research projects covered in the report included those directed toward the discovery of latent sources of fish which constitute food resources for the future. The Service Director declared that great underfished resources of herring exist in the north Atlantic and west Pacific, of pilchard in the south Atlantic and south Pacific, of tunas in the central Pacific and south Atlantic, of cod in the north Pacific and the Atlantic.

In the central Pacific, the results obtained by Service vessels scouting for tuna indicate that expansion of the Hawaiian tuna industry will depend largely on measures to increase the geographical area that the fleet can cover through construction of larger, better-equipped vessels, and improvement of the fishermen's navigational abilities.

New beds of deep-water red shrimp in the Gulf of Mexico were discovered by the Service's exploratory-fishing vessel *Oregon*. These now appear almost certain to become of commercial importance. The *Oregon* also made an important discovery of yellowfin tuna in the western Gulf. Exploratory cruises are planned to determine whether the yellowfin resources would support a new commercial fishery.

Changes in Alaska Fishing Regulations

Several significant amendments to the 1955 regulations for the proper utilization and conservation of the commercial fisheries of Alaska were announced by Secretary of the Interior Douglas McKay.

Most important is the one which separates trap sites from areas open to set nets in the Cook Inlet area. In this amendment, the location of every trap in Cook Inlet is pinpointed and the use of any other gear at such sites prohibited. Exception is made in the northern and north-central districts for the use of king salmon set nets prior to June 25 when traps cannot be used. Traps also are prohibited in areas open to set nets.

The changes in the regulations to describe sites open to traps and areas open to set nets in Cook Inlet were recommended jointly by fishermen, trap operators, and cannery operators, and will prevent the encroachment of either form of gear on the other, thus promoting harmony in the salmon fishery of that area. Secretary McKay also emphasized that fishing effort in the area will not be altered by these changes.

With the passage of Public Law 12, 84th Congress, which was approved by the President on March 16, all three types of fishing gear used in Cook Inlet will be left as they were in 1954. The minimum distance between sets in Cook Inlet will remain at 600 feet, the minimum distance between traps at 2,500 feet, and the maximum length of drift nets at 150 fathoms.

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Report from Washington

Gleaned from the Nation's Capital by John Harms

SOUTH AMERICAN TROUBLES.--Look for an understanding to be reached between the United States and South American Republics over U.S. fishing in the 200-mile maritime zone claimed by South American countries.

There are definite indications that the State Department is preparing to take positive steps as a result of recent Ecuadorian seizure of the freezer "Arctic Maid" and the purse seiner "Santa Ana." Information is still meager on Department plans, but expected to press for clarification of U.S. fishing rights and perhaps some negotiation on the 200-mile limit.

There is little question that the State Department will lodge formal protest over South American 200-mile territorial water claims. This involves a delicate matter of international policy but whatever else is done on this big question it apparently will have the backing of Congressional foreign affairs committees.

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A HOT SITUATION.--You get an idea of how serious the government views the Ecuadorian seizures from the fact that it sent two top trouble shooters to that country to investigate. Upon their return, findings of the investtigation were reported to Congress.

The two vessels were taken into custody by an Ecuadorian patrol boat on the high seas. The Arctic Maid was arrested by an Ecuadorian patrol boat about 24 miles due west of Santa Clara Island on March 27, 1955. The Santa Ana was picked up on the same day about 14 miles due west of that Island. During the seizure of the Arctic Maid, an American crewman was seriously wounded by rifle fire from the Ecuadorian patrol boat.

Both boats were forced to go to Guayaquil and were kept in custody for about 17 days. After that the Arctic Maid was fined $43,481 and the Santa Ana was nicked for $5,881 for violation of the 200-mile maritime zone claimed by Ecuador.

Immediately after the State Department received word of the incident, U.S. Ambassador to Ecuador, Sheldon Mills, was called to Washington for a report. Director of South American Affairs for the State Department, Rollin S. Atwood, and Fred E. Taylor, a special State Department assistant on fisheries, were sent to make an on-the-ground investigation.

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CONGRESSIONAL ATTITUDE.--Congressmen were shocked to hear the report of the Ecuadorian incident. Those from fishery districts demanded that something more than just notes of protest be done.

A typical reaction came from Washington Rep. Pelly of the House Fisheries Committee, who made the following statement on the floor of the House when he heard of the incident. Pelly declared:

"This is one more incident in a series of illegal acts on the high seas where certain South American countries have turned to nationalized piracy to raise revenue and extract tribute from our fishing industry. It brings to mind that a century and a half ago, during the infancy of our Republic, the Barbary pirates in the Mediterranean found it profitable to commit such depredatory acts on American vessels until we sent our Navy to terminate that system of nationalized ransom and roguery.

"Today it seems to me we are in a situation where a polite exchange of protest notes between good-neighbor nations and other such procedures of procrastination should end.

"Either Ecuador and Peru should immediately reach an agreement with us or submit and abide by international arbitration. If not, our Navy in its historic role should be ordered to provide armed escorts to protect American property and persons engaged in peaceful occupations in international waters."

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SALTONSTALL-KENNEDY ADVISERS.--As we went to press, the 19-man American Fisheries Advisory Committee was meeting in Washington to make plans for next year under the $3 million Saltonstall-Kennedy Act.

This will be the first formal meeting of the Advisory Committee. Assistant Secretary of the Interior Orme Lewis will preside.

Timing of the Advisory Committee meeting is in part to have a meeting of the minds before Mr. Lewis leaves for the Geneva conference where trade negotiations are being conducted with Japan and other countries. Mr. Lewis will represent the Interior Department, including the Branch of Commercial Fisheries.

Among the items listed as eligible for negotiations with Japan are fresh and frozen tuna, and canned tuna.

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SHIP RADIO LAW.--You can expect speedy congressional action on a bill to tighten up on violations of Federal Communications Commission regulations governing the use of radio on the high seas. The bill has been introduced by Sen. Warren G. Magnuson, chairman of the Senate Committee on Interstate and Foreign Commerce.

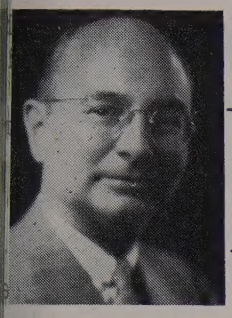
The bill, S. 1549, would "amend the Communications Act of 1934 so as to authorize the imposition of administrative fines by the Federal Communications Commission for violation of its rules and regulations . . . "This means stiff fines for violators of radio messages."

The National Fisheries Institute says the law is designed to provide a better enforcement of communications regulations, "violations having reached the point where safety at sea is being jeopardized."

Sen. Magnuson inserted the following statement from the FCC in the Congressional Record to back up his bill:

"The seriousness and magnitude of the problems presented can be best illustrated by the situation that now prevails with respect to small boats equipped for radio-telephone communications and operating in the 2-3 megacycle band.

(Continued on page 21



The Publisher's Page

Singing the Blues.—A man with two Cadillacs, a town house and a beach place was crying in his beer the other day:

"I can't afford to advertise. I just got through paying my income tax and it sure ruined me. Besides, competition is getting keener all the time and I can't make the big profits I'm accustomed to."

So let's join the chorus of those who are singing the blues about the United States. Let's admit it; we've got problems no other nation has. For instance:

No other country in the world has any problems caused by a surplus of food.

No other country has such traffic congestion because so many people own automobiles.

In no other country do people take so many holidays and have so much leisure time in which to spend the money they earn—more money than the people get in any other country.

And no other country has as one of its chief medical problems the fact that so many people are overweight because of the abundance they enjoy.

It's a sad situation, mates; let's all go to Las Vegas for another week-end and drown our troubles.

Eating High on the Hog.—An expression we hear frequently these days is that the American people are "eating high on the hog." That's a picturesque way of saying that times are good and people are living well. But it's really more than that.

American industry has a productive capacity today that would have seemed miraculous 30 years ago. Its high efficiency enables our factories to turn out more and better industrial products than ever before, with relatively less expenditure of human effort.

An equally great improvement has taken place in agricultural production and in the food industry, including fresh, frozen, and canned. Hence, today the consumer's hour of labor buys more and better food than at any time in history.

The 1955 market basket—filled with a typical family's food for a week—has many advantages over its 1920 counterpart; more fish, milk, eggs, fruit, green vegetables—almost all of them far better and with higher nutritive value. The relative cost—about 25% of our take-home pay—remains the same; it's the quality and convenience that have gone up. Much credit is due our industry for helping in this achievement.

Tariff Block "Playing for Keeps."—The show-down period is here in the big battle over the Reciprocal Trade Act. The present Act expires June 12, and opinion is pretty well divided as to whether it will be (1) killed, or (2) extended as is for 1, 2 or 3 years, or (3) extended with certain amendments.

As we go to press the trend is toward the latter policy . . . but the issue is quite controversial, and can scarcely be settled without a big squabble in Congress.

Lobbies supporting the Act are fighting to have it extended for three years, instead of just one or two as has been the recent practice. Those supporting this liberalized trade program include the AFL and CIO unions, most agricultural associations, and many industries that want to sell more American products abroad by building up the dollar exchange with foreign countries.

Dead set against "free trade" is the Nation-wide Committee on Import-Export Policy, headed by O. R. Strackbein, former Tariff Commission official who is well known in this industry and whose articles have occasionally appeared in this publication opposing the dumping of foreign fish into the United States.

The impact of this fight is being felt in the tuna industry more keenly than in many others. Its outcome will have far-reaching effects.

The Rails or the Union?—There have been some differences of opinion between the railroads and this industry, on account of trucks, trailers and highway problems.

In a current case we are wholeheartedly on the side of the rails in an argument with the unions. The L. & N. Railroad, which makes Cincinnati and Louisville "the gateway to the South," has been strike-bound for many weeks. The strike was called by the union to make a welfare program compulsory on every employee, whether he needed or wanted it.

The railroad was to contribute $3.40 monthly per employee, and each worker was to have a similar amount deducted from his pay. Of this total amount, however, less than $6 would go for insurance; 85c would go to a special union fund not clearly explained.

The L. & N. agreed to the plan except the compulsory part; instead it agreed to make a similar plan available on a voluntary basis, offering each employee who wanted it the same benefits but at a cost of only $1.85 per month.

A group of non-union and ex-union members stated, "the union's attempt . . . violates our rights and is destructive of democracy and liberty." As we go to press the strike has been on for 15 weeks, working great hardship and loss throughout a number of states.

Time to Go.—Writing this on the first day of the trout fishing season in California, we couldn't get away but had to sit at a desk . . . thinking of fish stories. Some good, some bad, and one like this:

The preacher at a wedding ceremony was an ardent fisherman and a forgetful cuss. He asked the groom:

"Do you promise to love, honor and cherish this woman?"

"I do," said the groom, meekly.

"Okay," said the preacher, turning to the bride; "reel him in."

BRIANT SANDO

A Letter and Some Recommendations

THIS is a copy of the letter:

AMERICAN TUNABOAT ASSOCIATION

San Diego 1, California
April 1, 1955

The Honorable Douglas McKay
Secretary of the Interior
Department of the Interior
Washington, D. C.

Dear Mr. Secretary:

That portion of the tuna producing industry which fishes for yellowfin and skipjack tuna in the eastern tropical Pacific Ocean out of the southern California ports of San Diego and San Pedro catches, on the average, about 85% of the tuna caught by United States vessels totally each year, and they have done so for many years. The purse seiners, mostly out of San Pedro produce about 15% of the total; the bait boats, mostly out of San Diego, produce about 70%.

This yellowfin-skipjack tuna producing industry has been going through strenuous times economically because of competition in this market from imported tuna produced by foreign fishermen, chiefly Japanese. The foreign trade policy of the United States Government appears to be so strongly against the protection of this domestic industry that we yellowfin and skipjack tuna fishermen not only have no present hopes of achieving any degree of protection vis-a-vis foreign produced tuna, but we are fearful of further damage being done to us by the forthcoming trade agreement to be negotiated with Japan.

Accordingly, the only course of action available to us is to compete with foreign produced tuna in this market on the basis of price. Our cost of operation, because we operate under the cost structure imposed upon us by the American standard of living is such that many of our vessels will fail financially in this action no matter what we or anyone does. In order to mitigate this attrition of the fleet we are seeking any and all methods of reducing our costs of operation.

We believe that there is a reasonable hope that the two research projects we are submitting attached hereto will in the course of their prosecution enable us to lower our cost per ton of producing tuna. Accordingly, we request that you give them your favorable attention as projects worthy of undertaking with funds provided under the Saltonstall-Kennedy Act.

In furtherance of our petition we submit that the U.S. Fish and Wildlife Service spend no funds on ocean research in the area of our fishery under regular or other appropriations, nor has it done so in the pas Ours is the only major fishery of th United States of which this can b said. We have not previously mad such requests because of our desir not to burden United States taxpay ers with our economic problem Now, however, the general foreig trade policy of the United States, a it is applied to our industry, force us to request these things of you. W trust and hope that you will giv these attached projects your favo able attention.

Sincerely yours,
AMERICAN TUNABOAT ASSOCIATION
H. F. Cary, General Manage

HERE are the recommendation

1.—Proposed Project Under Saltonstall-Kennedy Act

(P.L. 466, 83d Congress, 2d Session) For consideration by the Industry Advisory Committee

Title of project: Development of substitute for live tuna-bait.

Proposed by:

American Tunaboat Association, 1 Tuna Lane, San Diego 1, California. H. F. Cary, General Manager

International Association of Machinists, Lodge 389-E, 3911 Pacific Highway, San Diego, California—Cliff Weitz, Secretary

Cannery Workers' & Fishermen's Union, AF of L, 640 State St., San Diego 1, California—Lester Balinger, Secretary

Problem and objectives: To determine the nature of the feeding reactions of tunas and to develop means of attraction and capture in lieu of live bait.

Justification: The U.S. tuna industry is in economic difficulty due to high costs of production of tuna compared with the foreign product. About 45% of the time at sea of tuna clippers is spent in catching live bait. A substitute method of attracting tun to the hook would, therefore, greatl improve the efficiency of fishing an thus reduce costs of catching th tunas. The U.S. bait boat fishery i now at the mercy of other nation within whose territorial waters ar most of the supplies of bait used b U.S. fishermen, which is causing con siderable international friction; per mit fees for fishing in the territoria waters of other nations are a sizabl share of the cost of catching tuna Development of methods of bait fish ing, independent of live bait would therefore, be of additional impor tance in eliminating much of the in ternational problem and in eliminat ing costs of fishing permits. Devel opment of fishing methods independ ent of live bait will also make pos sible profitable fishing in areas o the Pacific not now used by the U.S fleet because of scarcity of live bai fishes.

Who will benefit: Direct benefit will accrue to tuna fishermen, boa owners, and canners. Indirect bene fits will accrue to shipyards, shi chandlers, marine suppliers, fue vendors, and others who depend o the U.S. tuna industry for a share o

heir business. U.S. consumers of canned tuna will benefit by lower prices.

Method of procedure:

1. Measurements, at sea from commercial fishing vessels and research vessels, of the feeding reactions of tunas, with particular reference to determining the stimuli to which the fish respond.

2. Development and sea-trials of artificial methods of supplying stimuli to tunas in the sea to attract and capture them.

Work to be performed by: University of California Institute of Marine Resources. The Institute of Marine Resources is a University-wide organization, with headquarters at the Scripps Institution of Oceanography. It has available necessary research vessels, shoreside laboratory facilities, and experienced specialists in physiology, animal behavior, and in all other branches of science needed to carry out this project.

Estimated duration of project: Initial contract period 3 years, with possible continuation at the end of that period. Estimated costs (per year) $63,990.

2.—Proposed Project under Saltonstall-Kennedy Act

Title of project: Fisheries oceanography of the tropical and subtropical Eastern Pacific.

Proposed by:

Fishermen's Cooperative Association of San Pedro, Fisherman's Wharf, Berth 73, San Pedro, California—Mason Case, General Manager

International Association of Machinists, Lodge 389-E, 3911 Pacific Highway, San Diego 1, California—Clifford Weitz, Secretary

Cannery Workers' & Fishermen's Union, AF of L, 640 State St., San Diego 1, California—Lester Balinger, Secretary

American Tunaboat Association, 1 Tuna Lane, San Diego 1, California—Harold F. Cary, General Manager

Seine and Line Fishermen's Union, AF of L, 261 West Seventh St., San Pedro, California — John Calise, Secretary

Problem and Objectives: To determine the causes of seasonal and annual variations in the circulation and distribution of properties in eastern Pacific waters, and their effects on the distribution, behavior, and availability to capture of the tunas, in order to make possible forecasting of areas and times of good tuna fishing, and so to increase the efficiency of tuna fishing by U.S. fishermen.

Justification: The U.S. tuna industry is in great economic difficulty due to its high cost of producing fish compared with foreign fishermen. More efficient operations, and consequent lower costs, will result from the ability to predict areas of good fishing and to locate them rapidly.

Who will benefit: Direct benefits will accrue to tuna fishermen, boat owners, and canners. Indirectly, benefits will accrue to shipyards, ship chandlers, marine suppliers, fuel vendors, can companies, and others who depend on the tuna industry for a share of their business. U.S. consumers of canned tuna will also benefit by lower prices.

Method of procedure:

1. Observations, from research vessels, of the circulation, distribution of physical and chemical properties, basic biological productivity, and standing crops of organisms in the food chain supporting the tunas, several times a year in regions of the Eastern Pacific important to the tuna fisheries.

2. Establishment of fixed stations on outlying islands and coastal points to obtain continuous records of physical data from which variations in circulations may be inferred.

3. Correlation of data from 1 and 2 with meteorological data, to determine the causation of variations in the circulation, and its biological effects, and to make possible prediction of biologically important oceanographic variations from meteorological data.

4. Correlation of data from 1 and 2 with data on the distribution, availability and behavior of the tunas. These data consist of observations, and results of fishing operations, of the tuna fishing fleets, supplemented by special observations from research vessels.

Work to be performed by University of California, Scripps Institution of Oceanography. This Institution has the required research vessel facilities, shoreside laboratory facilities, and experienced staff members to effectively conduct this program. It is now engaged in a similar program in the region of the fishery for California sardines, which encompasses part of the area important to the tunas, and has conducted more general investigations in the entire region of the tuna fishery. The Inter-American Tropical Tuna Commission is located on the Scripps Campus, and its Director of Investigations is also a staff member of the Institution. Close coordination of the proposed program in physical and biological oceanography with the research on the tuna fisheries being conducted by the Commission is necessary for effective results.

Estimated duration of the project: Initial time period, 3 years, with consideration of desirability of continuation at the end of that period. Estimated costs (per year)—$281,556.

Food for Yellowfin Tuna

To find out what the tuna eat, POFI has identified the materials in the stomachs of many tuna caught on fishing survey trips. Apparently yellowfin tuna eat almost anything they encounter that is active, large enough to be noticed, and small enough to swallow.

The variety of sea animals in their diet is outstanding and many are of surprisingly small size. Over 75% of the stomachs contained organisms weighing less than one-tenth of an ounce. Occasionally quite large animals are eaten too, the largest being a 16-inch skipjack found in the stomach of a 53-inch yellowfin.

This wide variation simplifies the problem of finding the tuna feeding grounds; they should be anywhere in warmer waters where general biological productivity is high. There is no need to find concentrations of a particular kind of feed.

Consistent with this are the different proportions of the various kinds of food in tuna taken from island and oceanic areas.

Within five miles of islands the surface tuna eat almost equal parts of small reef fish and crustaceans such as the free-swimming young stages of crabs and mantis shrimp, which in their adult form live on the reef and on the bottom in shoal water.

Somewhat farther off-shore but still within 10 miles the crustaceans diminish and the squids become a much larger element in the food of deep-swimming tuna caught with longlines, and in truly oceanic areas the diet is made up of almost equal parts of small fish and squid with very few crustaceans.

The San Diego Waterfront

THIS is the main text of a report released by Chairman V. Earl Roberts, of the San Diego Chamber of Commerce Special Committee on the Tuna Industry. Regarding this report Harold F. Cary, general manager of the American Tunaboat Association made this statement:

"The tuna producers are pleased with this expression of interest by the businessmen of San Diego. It is our firm conviction that a businesslike approach to this tuna problem by the Department of State can result in major improvements. It is our hope that a report such as this may aid in producing this result."

—The Editors

★

THE tuna fishery and the tuna canning industry are of major importance to the economy of San Diego. Since the earliest days of the tuna market in the United States, San Diego has played a most prominent part; it was here that the tuna clipper was developed to take its place among the finest fishing vessels in the world.

A vigorous, growing, competitive industry developed, despite declines which occur from time to time in any business activity. Recently severe reverses have been felt by the local tuna industry and it is the purpose of this report to analyze the problems involved and suggest some solutions.

Employment

Processing Plants.—In 1949-1950 there were approximately 3000 persons employed in San Diego canneries. Now there are approximately 650 persons so employed . . . a decline of approximately 2350.

Fishing Fleet.—In 1949-1950 there were approximately 2500 full time jobs for fishermen, engineers, radio operators, navigators, and other skilled seamen. This number rose to above 2700 in 1951. Now it's down to 2100 . . . a decline of approximately 600 full time berths in the high seas clipper fleet.

Employment declines are also felt by the local albacore fleet which has largely lost its auxiliary commercial fisheries.

Related Activities.— Employment in local shipyards on maintenance, repair and construction of large and small fishing vessels has proportionately declined. Service and supply establishments report similar experience.

Facilities

Processing Plants.—In 1949-1950 there were six canneries operating in San Diego. In 1955 there are three canneries; one is operating, one is closed with a probability of return to small scale operations soon, and the third is closed with little prospect of operating on more than a stand-by basis in the predictable future.

Fishing Fleet.—The major supplier of frozen tuna to the United States is the clipper fleet of San Diego.

At the end of 1949 this fleet totaled 193 vessels, increasing to 210 by the end of 1951. Now this fleet totals 165 . . . a decrease of 45 vessels in the last three to four years.

Tuna landings are an important source of wealth to this port. The City of San Diego is now working on a bond issue to increase port facilities. A continuation of the downtrend in tuna landings would act to nullify the effect of this effort.

The General Situation

Size of Tuna Market.—The United States is the only mass market for canned tuna in the world . . . a market created and developed almost exclusively by the canners in San Pedro and San Diego.

There has been a steady growth in apparent consumption. In 1949 the total was 7,900,000 cases of tuna and tuna-like fish. For the two years 194 and 1950 the average was 9,600,00 cases. In 1953 the total was 11,800 000 cases. For the two years 195 and 1954 the average was 12,350,00 cases.

Supply for the Market.—In 194 domestic fishermen supplied tun which represented 91.4% of the tota United States market. For the tw years 1949 and 1950 the averag was 88.4%.

In 1953 domestic fishermen sup plied 66%, with an average drop ping to 60.5% for the two years 195 and 1954. In 1954 the percentage i estimated to be 55%.

It is evident that United States fish ermen have not shared in the growt of the domestic market.

Domestic production was origin ally *supplemented* by imports. The situation has changed to the exten that much domestic production ha been *supplanted* by imports.

Excess of Imports

Despite an expanding market, the domestic tuna clipper fleet operat ing from Southern California has declined in size from a fleet totaling 44,300 capacity tons at the end o 1951 to one of about 37,500 capacity tons at the date of this report. The purse seine fleet shows a similar de cline.

The basic cause of decline of the local and Southern California tuna industry has been an excess of im ports, principally from Japan.

Frozen tuna imports from Japan have risen from 2,800,000 pounds in 1949 to 98,000,000 pounds in 1954

Canned tuna imports (oil and brine) have risen from 4,600,000

pounds in 1949 to 31,600,000 pounds in 1954.

An aggravating factor now present is the probability that the United States Government will negotiate drastic concessions to Japan on tuna products.

Suggested Actions

It is the recommendation of the Committee that the present negotiations with Japan should not result in additional concessions.

While the President is authorized to grant duty reductions and make other concessions to reduce *barriers to trade*, the 5-year increase in canned tuna imports of almost 700% does not indicate that present tariff rates are in fact *barriers to trade*.

The Committee cannot comprehend the proposed action of the United States Government which may bind the present duty-free rate on frozen tuna. Frozen tuna imports from Japan have increased 3500% in the last five years. Evidently the present zero duty is no barrier but instead places the Japanese supplier in a preferred position.

This Committee further recommends that the Governments of the United States and Japan discuss a businesslike settlement of the tuna problem. There is ample precedent for this in actions which the United States Government has approved and endorsed, as in the case of agricultural commodities where special treatment is accorded them under the G.A.T.T. Agreement, and in the recent Tung Nut and Tung Oil announcement by the President.

The present administration and preceding administrations have repeated the promise that serious injury to a domestic industry would not result from the operation of the Trade Agreements program. We therefore recommend careful consideration in the proposed negotiations involving this industry, where serious injury already has occurred. *

Tuna Rate of Growth

The Hawaiian longline fishery affords information on the growth of the yellowfin caught near the Islands. The fish are brought into the market and weighed individually. Records show the rate of growth in successive years of life. The tuna grow very rapidly in their early years, increasing more than 50 pounds a year in middle life. This is a very rapid growth rate but is consistent with knowledge of tuna growth obtained in other parts of the world.

Sardine Prospects Bright

Prospects appear bright at this time for another good year in California's sardine fishery, based on recent surveys of the early spring spawning.

The latter has proved to be a good indicator in past years. A marked increase in sardine spawning off southern California and adjacent Baja California in the spring of 1954 preceded the encouraging recovery of the southern California sardine fishery in the fall of 1954.

The southern California-northern Baja California spawning area and the one off central Baja California are the current major spawning centers. In recent years, particularly in 1952 and 1953, the southern California center had decreased markedly in importance; the spawning in this area in 1954 was about 30 times greater than it was in 1953.

A relation seems to exist between the amount of spawning in the southern California center in the spring and the availability of sardines to the southern California fishery in the fall. In 1952 and 1953, when few fish spawned in this center, the fishery took only about 5,000 tons; in 1954 the fishery took over 65,000 tons.

Considerable numbers of sardines again have been spawning in the southern California center. In March and April, sardine spawning extended as far north as San Pedro and was widespread off San Diego and Ensenada. Since the spawning season in this area extends from March through June, this report concerns only the early portion of the spawning season.

If the present good spawning continues, and the same relation continues between the amount of spawning in the spring and the availability of sardines in the fall as during the past three seasons, the industry can expect to have a good fishery this fall.

These studies are part of a cooperative research effort of the South Pacific Fishery Investigations, the Scripps Institute of Oceanography, the California Department of Fish and Game, Hopkins Marine Station and California Academy of Sciences. The California Marine Research Committee directs this joint program, which is known as the California Cooperative Oceanic Fisheries Investigations.

ALUMINUM IN SHIPS

Aluminum, used in shipbuilding since 1892, is now on the increase. It is desirable material because it is light in weight and resistant to corrosion. However, its resistance to corrosion is lessened when it is joined with iron or steel, when it comes in contact with copper alloys, and when anti-fouling compositions containing mercury compounds are used on or near it.

Two boats, one, a 30-foot lifeboat, the other, a 55-foot motor yacht, are cited as examples of the correct use of aluminum. Built in 1934 and 1931, respectively, these vessels have been thoroughly checked for corrosion periodically up to the present time. Little or no corrosion has taken place, and both are still in a seaworthy, serviceable condition.

When using aluminum in ship construction, be sure all ways: joints are placed so that moisture does not collect around them, and place a gasket-like separator between aluminum and other metals such as copper and steel.

EBB 'n FLOW

1956 Tide Tables

Serial No. 780—Tide Tables, East Coast, North and South America (including Greenland) for the year 1956—has just been issued by the Coast and Geodetic Survey.

The new edition of tide tables contains 276 pages, with full predictions for 44 reference stations and differences and constants for about 1,600 stations in North and South America. Included is a table for obtaining the height of the tide at any time, and tables of astronomical data giving times of sunrise and sunset, moonrise and moonset, moon's phases, etc. The variations in the tide from day to day and from place to place are illustrated by tide curves for representative ports.

Copies are distributed by the sales agents, district offices, and the Washington office of the Coast and Geodetic Survey. Price 50 cents per copy.

New Fishery Field Offices

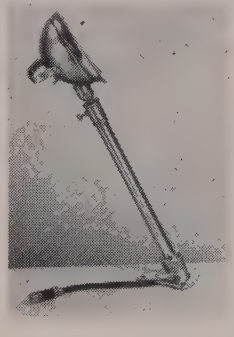
Four new market development offices for the field promotion of fishery products by the Fish and Wildlife Service have been opened.

Established in accordance with the Saltonstall-Kennedy Act's aim "to promote the free flow of domestically produced fishery products in commerce," these offices are located in Seattle, Wash., San Pedro, Calif., New Orleans, La., and College Park, Md. Each office is headed by a fishery marketing specialist, as follows: Seattle, Roy Stevens; San Pedro, S. Ross Hatton; New Orleans, Michael Weissman; and College Park, Hall P. Mefford.

The Seattle office will supervise work done in the States of Washington, Oregon, and Idaho. Work in California, Nevada, Utah, and Arizona will be directed from the San Pedro office. The New Orleans office will have charge of a working area composed of Louisiana, Mississippi, Alabama, Kentucky, and Tennessee. From College Park the work in Maryland, Virginia, West Virginia, Delaware, Pennsylvania, and New Jersey will be supervised.

The new offices will work to develop fishery-product markets through close contact with: school-lunch operators; private and public institutions; restaurants; hotels; press, radio, and television food editors; and other similar interests concerned with the marketing and consumption of fish and shellfish.

The Saltonstall-Kennedy Act, which makes funds available for this work, is designed to strengthen the American commercial fishing industry as a whole. The legislation provides that an amount equal to 30% of duties collected under the customs laws on fishery products shall be transferred annually for three years from the Department of Agriculture to the Department of the Interior. Expenditures for any one year may not exceed $3,000,000.



Triple Duty Searchlight

One light does the work of three on small boats. Designed for the bow, this new searchlight can also be used in a companion stern socket, or the head may be unsnapped from its base for use with a 15 foot extension cord, one end of which plugs into the head and the other into the base.

The telescoping feature solves most "difficult" bow mounting problems. The patented waterproof universal swivel joint has a full 360 degree swing. Equipped with a 6 or 12 volt sealed beam bulb. Tubing comes in 12, 18 or 24 inch lengths, heads in three sizes starting with 4¾ inch, which has a quarter mile beam. Write Kilborn Sauer Co., 1581 Post Road, Fairfield, Conn.

Relax It Vibrator

This is a new twist to exercise or slenderize. A sturdy rubber platform rotates, while you pivot on it, bending, twisting, stretching your way to health.

There is nothing to get out of order, no adjustment to make, designed to last a lifetime. Takes u
little room; $9.95 from Turn Styl
10624 Ventura Blvd., North Holl
wood, Californa.

Marine Engine Catalog

A new brochure covers the adva
tages of Diesel power in pleasu
and work boats, also the characte
istics of GM Diesel marine engi
models and their adaptability to var
ous type hulls; defines such term
as "pitch" and "slippage;" and di
cusses the factors involved in selec
ing the correct propeller for mo
types of boats.

The brochure can be obtained fro
Detroit Diesel marine distributors o
by writing Detroit Diesel Engine D
vision, Detroit 28, Michigan.

Economical Radar Model

The peril of collision in fog o
darkness—major hazards to smal
vessels threading their way throug
crowded harbors or along rock
coasts—has been reduced through th
magic of electronic devices.

Now "Big Ship" radar, with it
rotating antenna and all-seeing ey
is no longer confined to Navy an
other large vessels, but is availabl
at moderate cost for use on smal
fishing vessels, workboats, moto
launches, and similar craft. Raytheo
has brought out a small model o
their famous "Mariner's Pathfinder."

The new radar has all of the essen
tial features of its bigger predeces
sor, sending out a radio signal lik
the rays of a searchlight. When thes
rays strike an object, they rebou
like echoes, but with the speed o
light. The radar picks up thes
"echoes" of its own signals, and trans
lates the time interval between th
signal and its echo into distance. Th
direction and distance of objects ar
indicated on a picture scope, simila
to a television screen, with selectiv
ranges of one, two, four, eight, an
16 miles. The operator can keep
constant check on the ranges, bea
ings, and courses of other vessels, t
avoid collisions; or keep simila
track of fixed objects like buoy
shore points, and lightships for nav
gational purposes. Raytheon Mf
Co., Waltham 54, Massachusetts.

TIDES OF THE INDUSTRY

Plastic Lobster Pots

An entirely new type of plastic lobster trap buoy makes obsolete the often partly - water - soaked wooden float; and inexpensive plastic lobster trap rings replace costly galvanized rings.

Highest buoyancy, permanent color, and the ability to withstand rough handling almost indefinitely are some desirable features. They will not indent or break off in pieces. No maintenance is ever required, not even painting.

The plastic trap rings are designed for easy handling and installation, heavier catches, less deterioration to the twine, and low original cost. There is no ring-wear-out, discoloration, or oxidation problem possible. Write to the J. H. Shepherd Son & Co., 1820 East Ave., Elyria, Ohio.

Canned Foods and Bombs

"Grandma's Pantry" was a special exhibit in "Operation Cue," the atomic test program being attended here by some 1,800 visitors near Las Vegas at the Nevada Test Site, under auspices of the Federal Civil Defense Administration.

In grandma's day, her well-stocked pantry safeguarded the family against floods, blizzards, hurricanes and other devastations when outside food sources were inaccessible. Superbomb hazards of today furnish similar reasons for modern families to maintain a "Grandma's Pantry" which would hold in dead storage and immediate readiness a 3- to 7-day stock of food supplies. Radioactive fall-out from the bomb might keep people in their shelters anywhere from a few days to a week depending on the intensity of the radiation . . . and it might pay families to plan against this hazard, even if it never occurs.

Representatives of the canning and tin container industries that helped set up the "props" for "Grandma's Pantry" recall that in the World War II bombings of the European cities, canned food frequently became the only source of food and drink for unevacuated populations whose public utilities (power and refrigeration) and distribution systems had been disrupted.

Commercial Research at Enterprise

Gordon P. Vega has been appointed Manager of Commercial Research of Enterprise Engine & Machinery Co., subsidiary of General Metals Corporation, San Francisco, according to an announcement by Arthur W. Ostrander, general sales manager of the firm. His duties will include market research, sales analysis and sales development.

New White Diesel Engine Division

The White Motor Company of Cleveland, Ohio, a large producer of trucks and tractors, has acquired the Engine Division of the National Supply Company in Springfield, Ohio. The latter will hereafter be known as the White Diesel Engine Division, with the White interests from the new base in Springfield planning to expand Diesel research and development work in addition to producing and selling Superior and Atlas Engines — two old and well-known names.

New Sanitary Mop

A new product known as the "Merry Mop," especially designed for use where sanitary regulations exists in the preparation of food products, is said to be unusual from two angles: It is a combination of top features of the patented Corcoran Mop plus unusual features of a new sponge material known as Plastifoam. It is light weight, flexible, elastic; contains millions of subtle, uniformly distributed inter-connecting air cells. These import to it an unsurpassed permanent resilient cushion effect which is preserved at low temperatures as well as tropical heats.

Each "Merry Mop" is available with two handles, long and short, and patented "built-in- wringer." Refill Sponges are only $2.25 each. Write Corcoran Mfg. Co., 900 Fairbanks Court, Long Beach 13, California.

Plastic Floats

Man-made sponges of plastic are replacing natural cork in seine floats now being used by some of the nation's commercial fishing fleets.

The new plastic floats, manufactured by B. F. Goodrich's Sponge Products division, were exhibited at the National Fisheries Institute convention in New Orleans.

The smooth-surfaced plastic floats cost less than cork and fewer of them are needed as they are more buoyant. They appeal to commercial fishermen because they do not rot and never need drying out. Their buoyancy is not affected by water-logging, punctures or cuts, and nets and lines cannot foul on the smooth plastic surface.

Interest Runs High At
FISHERIES CONVENTION

THE National Fisheries Institute, composed of fishing fleet owners, packers, processors, brokers and distributors, held its 10th annual convention in New Orleans last month. Over 1,000 attended. Also meeting jointly with it was the Shrimp Association of the Americas.

Among the program highlights of interest to Pacific Coast fisheries were the following:

Assistant Secretary of the Interior Orme Lewis, speaking at the first general session said "the nation would look to the fishing industry as a major source of uncontaminated food in the event of a widespread sneak atomic or bacteriological attack on this country."

He reported that exploration, now underway, will tell us more about these hitherto-untapped fishery resources, and the kind of equipment needed to harvest them.

Research Efforts

Mr. Lewis, who has jurisdiction of the Interior Department's Fish and Wildlife Service, pointed out that the Service has, for some time, operated specially-equipped research boats which search for new seafood resources — resources which are not being fished at present because the fish are so deep underwater.

The Interior Department official said this exploration originally was undertaken to locate the new food resources which will be needed as our population expands.

However, he said, this special program has acquired a new importance in view of the necessity of locating vast food supplies which would be free of contamination in case of atomic warfare.

He said the fishing industry has never approached realization of its production and marketing potential, but added "now we are entering an era in which that goal can and will be reached."

James Sinclair, Canadian Minister of Fisheries, in reviewing the United States-Canadian cooperation in the fields of fishery conservation, research, quality control, port privileges and marketing techniques, added:

"I sincerely hope we will continue our past record of cooperation in the trade of our fishery products."

The Canadian fisheries chief pointed out that the United States sold Canada nearly $3 billion dollars worth of goods last year, while Canada sold this country nearly $2.5 billion worth of goods.

Bait Substitutes

In a long-shot effort to find a new way to catch bait fish, the Interior Department's Fish and Wildlife Service has been conducting limited experiments with underwater lights, electrodes and suction pumps. The theory is that small fish will be attracted by the underseas lights, swept toward the pumps by electrical impulses, and pumped aboard and into the bait tank through a long hose.

While the results of the experiments are a long way from making obsolete regular bait-catching methods, Richard T. Whiteleather, assistant chief of the Service's Commercial Fisheries Branch, said there's hope that suction-pump fishing someday might prove an auxiliary means of bait-gathering.

The experimental apparatus has been set up on the Service's exploratory vessel, the John N. Cobb, operating off the Pacific Coast Northwest. Mr. Whiteleather says the staff of the Service's Seattle office played a hunch that bait might be gathered, at sea, with a suction pump—taking a cue from the way that suction pumps now are used to transfer from net to boat heavy catches of small fish such as menhaden.

In experiments last year, small herring were caught at an average of 1,178 fish a minute, or 70,720 an hour—provided seas were calm, and nothing occurred to frighten the fish away from the attraction of the 1000-watt light.

One of the biggest difficulties, Mr. Whiteleather says, is attracting the fish from the edge of the pool of light into the range of the suction pump. The power of the electrical fields so far developed has been limited, and has lacked sufficient attraction to bring the fish toward the hose.

A further problem, he says, is to originally attract the fish in sufficient numbers to make the operation practicable.

However, Fish and Wildlife Service experts are continuing the experiments whenever possible, and may soon try lights of various brilliance, colored lights, and electronic sounds of varying frequency and intensity in an effort to provide a greater attraction for fish.

Mr. Whiteleather points out that suction-pump fishing might provide fishermen with valuable "insurance" for a bait supply at sea. If suction pump fishing ever becomes practical, live bait could be obtained each night while fishing boats are drifting or moving slowly over the ocean.

Shrimp Production

An all-time high was reached in domestic shrimp production in 1953, but demand for the product by the American public kept pace with the increase, said Harry E. Sahlman, president of the Shrimp Association of the Americas.

Mr. Sahlman said domestic landings last year totaled 147 million pounds . . . total weight after heads had been removed. He pointed out virtually all this catch was marketed, as well as an additional 41½ million pounds of imported headless shrimp.

J. Roy Duggan, a St. Simons Island, Ga., processor, said the current demand for breaded shrimp was the greatest he had ever experienced. He said he felt the public demand for convenience — ready-to-cook—quality food helped spur the demand.

Industry leaders agreed the tremendous public demand for prepared foods, coupled with a good price structure and strong promotional efforts, accounted for the steadily increasing consumption of shrimp—a trend that has been apparent through the last few years.

Menhaden

A small, silvery fish, called Munnawhatteaug by the American Indians who first discovered its valuable uses, accounted for nearly 40% of the total commercial fish catch by United States and Alaskan fishermen last year.

Known generally today as menhaden — and under such regional aliases as chebog, fatback, mossbunker and alewife—the fish supplies most of the fish meal and oil for domestic use and export.

(Continued on page 20)

TESTS OF STEEL TUNA LONGLINES

Tests of a new type of steel flagline gear were completed last month with the return of the U.S. Fish and Wildlife Service research vessel *John R. Manning* to Pearl Harbor. Local fishermen use cotton line for flagline fishing. Government scientists are attempting to mechanize flagline gear, and tested their ideas on the recent cruise in the rich yellowfin grounds near the Equator south of Hawaii.

Reason for trying to mechanize the longline method of fishing for tuna, heretofore used on a large scale only by the Japanese, is to cut down the amount of manpower required and thus make it economically feasible for American fishermen to exploit the resources of deep-swimming tuna that only the longline can reach.

The newly-developed fishing gear features a steel mainline which is set and hauled with reels powered by a small winch. At appropriate intervals along this cable D-shaped rings are fitted for the attachment of the branch lines, which bear the hooks. A device has been developed to snap the branch lines on these rings automatically as the gear is payed out, a task which must be done by hand on the traditional type of longline.

Equal amounts of the steel gear and the usual cotton longlines were set at 11 locations around Washington and Christmas Islands and in the open ocean, in order to gain a basis for comparison of the performance of the two types of gear.

According to fishery biologist Joseph King, scientist in charge aboard the *Manning*, the steel lines were handled with less effort than the regular cotton lines, and the automatic setting device, although requiring further refinement, shows considerable promise. The use of nylon for branch lines cut down the rate of loss of fish and gear below that previously experienced when cotton branch lines were used on steel mainlines.

In 10 days of fishing the *Manning* took about seven tons of tuna, comprising 128 yellowfin, four bigeye, and two skipjack. Of the yellowfin brought aboard the vessel alive, 47 were tagged and released in the hope that their recapture may provide data on their migrations and growth. The best day's catch was 42 yellowfin, at a location near Christmas Island. In addition to the tunas, nine marlin and 133 sharks were captured.

An interesting incident of the cruise was the landing of a huge white marlin, estimated to have weighed around 1,500 pounds, which had in its stomach a freshly killed yellowfin tuna five feet in length and weighing 157 pounds. Some light was thrown on the question, often debated by fishermen, of the use that marlin make of their bills in capturing their prey by the fact that the tuna had been speared clean through its body twice before being swallowed.

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POFI Activities

Scouting for skipjack in the vicinity of the Hawaiian Islands during March failed to show any large concentrations of skipjack close to the islands, in fact, most of the schools were seen beyond 35 miles from land. Most of the 35 schools sighted were small and moving very fast and were composed of fish 3 to 7 pounds in size. The "season" skipjack were not yet present in the latitudes of the Hawaiian Islands. These larger fish, averaging about 20 pounds in weight, make up the bulk of the Hawaiian tuna fishing industry during the summer season. Commercial fishing by the Hawaiian skipjack fleet was poor this spring, with few of the larger, more desirable fish being landed.

In an attempt to answer the question, "Where do the skipjack caught locally come from and where are they going?" 107 were tagged with the California-type plastic tube tags. This makes 285 tuna tagged since last summer in local waters. An expanded skipjack tagging program for local waters is now being considered.

The *Charles H. Gilbert* has been trolling and longlining in equatorial waters near the Line Islands. The purpose of this cruise is to initiate tagging of small and large yellowfin near the islands to learn the migratory habits of surface and deep-swimping tuna.

Trolling about 100 hours during the latter part of March produced about 260 yellowfin, of which 242 were tagged; three skipjack were taken on the troll and both were tagged.

One good day's trolling around Christmas Island produced 6.2 yellowfin per hour or about one ton per day, using only five lines. Five days of longline fishing in March produced 123 yellowfin, but none of these could be tagged. Meteorological and hydrographical data were collected at the same time and will be used to associate the occurrence of the tuna with the ocean current conditions.

Per Capita Consumption of Fish

Americans ate one-third of a pound more fish per person in 1954 than they did in 1953, the Fish and Wildlife Service has reported.

Total consumption of commercial fishery products in the United States amounted to 1.8 billion pounds, or 11.1 pounds (edible weight basis) per capita in 1954. This compares with 10.8 pounds per capita in 1953 when our civilian population w almost 3 million smaller.

In total, the increase in the co sumption of fishery products ov 1953 amounted to 80 million poun —equivalent to 150 million to 20 million pounds (round weight basis Both domestic landings and impo of edible fishery products in 19 were larger than a year earlier.

Consumption of fresh and froze fishery products in 1954 increase about 53 million pounds over 195 Canned products were up 27 millio pounds. On a per capita basis, t use of fresh and frozen fish an shellfish amounted to 6.1 pounds— small increase compared with t previous year. Canned products a counted for 4.4 pounds per perso likewise a slight increase over 195 The edible use of cured product estimated per capita at 0.6 pound remained the same as in 1953.

The increase over 1953 in the co sumption of fresh and frozen fis reflects in part the rapid growth c both the domestic demand and pr duction of fish sticks. The civilia demand for canned fish was als maintained at a high level in 195 The tuna pack was the largest in hi tory, and that of canned Pacific sa dines was up significantly.

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The GLOBE

An International News File Compiled from FOREIGN REPORTS

Brazil.—A Santa Caterina, Brazil, fishing company has been authorized to contract for four French fishing vessels to operate in Brazilian waters for a two-year period. Two Spanish vessels will also be allowed to operate during the same period. The report adds that the annual Brazilian fish catch has greatly diminished since foreign participation (then Portuguese) was suspended a few years ago.

Ceylon.—A Japanese-operated long-line vessel in the first experimental trip off Ceylon caught 14 metric tons of fish, mainly large tuna and cod. The vessel used 35 miles of long lines and covered 550 miles in 10 days. This test cruise is part of a joint Japanese-Ceylonese research program which is concentrating on tuna fishing. If the survey proves favorable, a Japanese firm will be allowed to set up a fish-canning factory in partnership with Ceylonese interests. The necessary permission has already been granted by the Ceylonese Government.

Chile.—The UN Food and Agriculture Organization reports that Chilean fishermen have discovered a "succulent and high-priced prawn" of what may be an entirely new species. FAO says it seems to be a close relative of a species of prawn which was last reported 60 years ago to be living at a depth of about a mile in the ocean between Panama and the Galapagos Islands.

The fishermen discovered the prawn when they started deep trawling along the edge of Chile's continental shelf on the recommendation of an FAO fish biologist. Some of the fishermen came up with hauls of half a ton of the unknown species of prawn.

Germany.—The first oceanic research vessel built for the German Federal Republic since World War II, the motor trawler Anton Dohrn, has been launched in Cuxhaven and is carrying out trial trips. One of the vessel's first trips will include research involving young fish in the southerly North Sea and then the vessel will go to the fishing banks around Iceland and East Greenland in May and June 1955. There the Institute for Net and Equipment Research in Hamburg expects to conduct experiments with a midwater trawl in the catching of school fish, such as the deep-water ocean perch and cod and pollock. Plankton and hydrographic research also will be carried out.

Greenland.—Work has been completed on the first stage of an expansion of facilities at the new Norwegian-Danish fishery station at Faeringehavn, West Greenland, a U.S. Embassy dispatch from Oslo states. The station is being widely expanded with Norwegian, Danish, and Faero Island capital to permit increased exploitation of Greenland fishing banks which have been described as "the richest in the world." Purpose of the expanded installation is two-fold: (1) to provision and service expeditions which fish in West Greenland waters, and (2) to process fish caught there for direct sale to various foreign markets.

Jamaica.—Possibilities of supplying 10,000 pounds of shrimp monthly by air to a big food concern in New York are being explored in Jamaica. A representative of the U.S. company in Jamaica said: "I am of the opinion that shrimp are here in abundance, only waiting to be reaped." It is planned to fly the shrimp to Miami in specially-designed containers, to be distributed fresh as well as canned through outlets in the United States.

Spain.—The United States market which for many years has been the principal consumer of the best quality of the Spanish canned fish has lately shown increased interest in the possibility of importing albacore from Spain. In the absence of sardines from local waters, the Association of Owners of Fishing Vessels is seeking to extend the albacore fishing season, operating from about the early part of March until the end of September. The normal season has been from about the middle of May to the end of September. For this purpose some of the larger vessels, now devoted to hake and other deep-sea fishing, would have to transfer to albacore fishing, an operation which is not as easy as it would appear, since it involves the changing of practically all fishing equipment as well as the installation of tanks to carry live bait for albacore tuna fishing.

Spain.—The absence of a clear understanding between Spain and Portugal in regard to territorial waters continues to result in difficulties, according to Spanish fishing interests. Portuguese authorities have detained and confiscated catches of Spanish vessels operating out of Galician ports. The Vigo sardine fishing fleet travels as far south as Cape St. Vincent in the search for sardines. Vessel owners claim that their boats operate in that area but outside the six-mile limit fixed by the Portuguese and that their operations are under constant surveillance by Portuguese fiscal services.

Venezuela.—A representative of Venezuelan Association of Fish Canners and representatives of a consortium of Japanese tuna canners will soon begin studies of the tuna fisheries off Venezuela with the possibility that Venezuelan fish canners may establish a tuna industry. A report on Venezuelan fishes in Caribbean fisheries issued June 8, 1944, pointed out that there are tuna present in Venezuelan waters but up to now these fish have not been exploited.

NFI Convention

(Continued from page 16)

Total product value of last year's record catch of nearly 2 billion pounds was a whopping $39 million, according to Edward A. Power, statistical chief of the Fish and Wildlife Service.

With the increased demand for fish meal in animal feeds, because of the still-unknown growth factor in fishery products, the menhaden industry is flourishing. Fishing methods have remained virtually the same through the years, although modern menhaden fishermen employ such Twentieth Century devices as airplanes and electronic gear to help track the schools. *

Breaded Fishery Products Increase

A recent survey sponsored by the Fish and Wildlife Service revealed an upswing in domestic consumption of breaded fish and shellfish. Fish sticks — a new breaded item — and breaded shrimp are popular with families throughout the nation.

Of 1,797 housewives responding to questions concerning meals and snacks served in their homes between November 1953 and the same month last year, nearly 37% stated they had used *precooked* fish sticks, while 10% said they had purchased *uncooked* sticks and fried them in their own kitchens. Most of these homemakers said their families preferred the largest size fish sticks, and the 12-ounce package. Most also indicated that their families liked the fish sticks moderately seasoned.

Breaded shrimp showed a somewhat different pattern in the survey. More than 21% of the housewives responding, nationwide, stated they had purchased this item uncooked, while about 18% said they had bought the breaded shrimp in precooked form. Consumers showed a preference, in most cases, for medium-sized shrimp cooked to a light golden brown.

The survey showed that about 30% of the homemakers serving fish sticks were using them to some degree as a substitute for other fishery products. A slightly smaller percentage said they were using breaded shrimp for the same purpose. A large majority, however, indicated that their use of these items represented a net addition to their usual fish and shellfish consumption.

TUNA Imports Reach CRISIS

THE troubles that have been brewing in the tuna industry for some time finally came to a boil the last day in April, when Star-Kist announced at Terminal Island that they were temporarily suspending all purchases of domestic tuna catches . . . in the face of increasing Japanese imports.

Cannery officials said plants in both San Pedro and San Diego will stop buying American-caught tuna until they use up their supply of imported fish, or until a rotation plan is worked out to limit purchases caught by California fishermen.

In its May 3 edition The Los Angeles Times stated: "Because of a glutted market, Southern California's tuna fishing industry remained at a standstill yesterday amid threats by the head of the Fishermen's Union to picket canneries using imported tuna."

The fishermen were facing the familiar problem of competition from Japanese tuna boats which can sell their catches at $50 to $100 per ton below U.S. figures. About 100 boats in the tuna fleet have been idled by the development, many of them with their holds full of frozen fish; while other clippers are in distant waters, fishing or getting ready to return to their home port with their catches.

Meetings have been held to work out a solution and to solicit government assistance on the problem. In attendance have been cannery officials, union representatives, boat owners, and fishery associations.

First action taken was to send telegrams to various officials in Washington, D. C. These went out from the Fishermen's Union, the Fishermen's Co-operative Association, and the San Pedro Chamber of Commerce, all requesting that Congress undertake an investigation. The union emphasized the plight of the hundreds of American tuna fishermen—already serious because for some months they have been making only 25 or 30% of their normal income.

First reply came from Rep. King who wired: "I have taken the tuna problem up with President Eisenhower, Secretary Dulles, and the chairman of the Board of Tariff Commissioners."

King's wire was addressed to Mason Case, manager of the Fishermen's Co-operative Association; Anthony Sokolich, secretary of the Fishermen's Union, Local 33, ILWU, and Robert Duzich, chairman of the Commercial Fishermen's Insurance Exchange.

Sokolich said that if the situation is not cleared up his union will picket Japanees ships as well as refrigerator cars that transport Japanese tuna. Seven ships with tuna comprising part of their cargoes were reported en route to this coast.

Steve Marchins, San Pedro boat owner, suggested a mail bombardment on Congress. He proposed that quota be set on imported fish. Stan Brumell, executive secretary of the Commercial Fishermen's Insurance Exchange, urged that a committee be set up to handle a publicity campaign that would bring the matter to a focus in Washington.

At press time latest reports indicated that Sokolich is going ahead with plans to have his union picket Star-Kist and other canneries using Japanese tuna. Said he: "We would like to keep Japan as a friend, but this situation is wrecking the economy of all fishermen on the West Coast."

REPORT FROM WASHINGTON

(Continued from page 8)

"Over the past few years there has been an increase of approximately 400% in the number of such small boats equipped for radiotelephone communications. This increase has, in turn, increased the problems of enforcing the Commission's rules.

"With respect to the small boats, one of the local points of the Commission's difficulties is the fishing fleets operating off the coasts of the Gulf States and Mexican territorial waters. In this area the Commission has been plagued by a constantly increasing number of violations of its rules, involving transmissions on unauthorized frequencies, malicious jamming of channels and the transmission of profane language.

"For example, in April 1954 two Commission field engineers conducted monitoring operations for 12 days while aboard a fishing boat off the Mexican coast. During that period they observed a total of 291 violations of the Commission's rules."

NFI reports that fish trade association representatives, at a recent meeting with FCC officials, urged that the law be strengthened so that guilty individuals may be fined for violations.

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PER CAPITA FISH CONSUMPTION UP.--Americans are eating more fish and shellfish nowadays. Latest figures from the Fish & Wildlife Service indicate that per capita consumption in 1954 increased a third of a pound over the year before. Per person consumption went from 10.8 pounds in 1953 to 11.1 pounds in 1954. And there's every indication that it may be higher this year.

FWS says that domestic landings and imports both were larger in 1954 than a year earlier. Of the 80 million pounds total increase, fresh and frozen fish accounted for 53 million pounds, and canned amounted to 27 million. Cured fishery products remained unchanged.

One of the big factors in the consumption gain is the growing acceptance of fish sticks. Domestic production of sticks was 50 million pounds in 1954, an amazing increase from the 7.5 million pounds just the year before. Preliminary figures on fresh and frozen shrimp indicate that these items also contributed to the gain in per capita consumption last year.

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TUNA COMMISSION.--The House has approved the Administration's request for an increase in appropriation of $81,845 for the Inter-American Tropical Tuna Commission. The total funds approved by the House are $197,290, compared with $115,445 last year. This now must be approved by the Senate, where passage is expected.

The House bill provides an increase of $100,000 for all of the fish commissions, with the Tuna Commission getting the lion's share of the increase.

Here is a break-down on funds approved for other Commissions and functions: International Pacific Halibut Commission, $64,110 approved for fiscal year beginning next July, compared with $49,750 this year; International Pacific Salmon Fisheries Commission, $141,295, up $1,795; International Commission for the Northwest Atlantic Fisheries, $3,885, no

change; International Whaling Commission, $420, no change; International North Pacific Fisheries Commission, $13,000, up $2,000.

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TUNA OFF PERU.--Three United States flag tuna boats are getting around the 200-mile Peruvian maritime regulation and fishing in territorial waters claimed by Peru--but they are paying a "pound of flesh."

The Peruvian government has authorized the boats--Pacific Star Seiner, West Coast Helen's, and Pacific Queen--to fish for tuna within the territorial waters. But under this permissive order, the fish caught by these vessels will be considered Peruvian fish and will be taxed to the tune of $8 American money per ton of fish. Besides the export tax on any fish caught, the authorization contains a number of other strict provisions. The authorization lasts for one year.

The Peruvian government newspaper "La Nacion" claims: "Peru's 200-mile limit has again been confirmed and its basis on sound jurisprudence ratified."

The official organ goes on to state: "Within this limit it is not permissible to fish, hunt whales, nor carry on any industry based on fish without obtaining previous permission--such as these boats have done--under penalty of fine, requisitioning of the fish illegally taken, or capture of the ships, as happened during the latter part of the year in the case of the Onassis fleet and, more recently, in the case of ships belonging to North American industry."

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NEW FISH FIELD OFFICES.--The Fish & Wildlife Service has set up four new market development offices for the field promotion of fishery products under the Saltonstall-Kennedy Act. This is in line with the Act's aim of "promoting the free flow of domestically produced fishery products in commerce."

A new office in San Pedro, California, is headed by S. Ross Hatton, a fishery marketing specialist. Other new offices are in Seattle, Wash., New Orleans, and College Park, Md. The San Pedro office will supervise work in California, Nevada, Utah, and Arizona.

The new offices will work to develop fishery-product markets through close contact with: school-lunch programs; locker-plant operators; private and public institutions; restaurants; hotels; press, radio, and television food editors; and other similar interests concerned with the marketing and consumption of fish and shellfish.

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LOTS OF TUNA IN INDIAN OCEAN.--The Japanese report that the Indian Ocean to the northeast of Madagascar abounds in yellowfin tuna and offers excellent opportunities for Japanese fishermen if a base closer to Japan can be established.

This information was developed by a Jap fishery expedition sponsored by the Fisheries Agency Training Institute at Shimoneseki. It gives rise to further speculation that a Ceylonese-Japanese tuna corporation may be in the making.

California Sardine Survey

Approximately 65,000 tons of sar-nes have been taken in southern .lifornia waters in the 1954-55 sea-n—over 20 times as many as in the 53-54 season. Widespread and undant sardine spawning off south-n California in the spring of 1954 ralded this return; more than 30 nes as many eggs were spawned in 954 than in the same area in 1953.

The egg and larvae surveys pro-de a preliminary estimate of 115,-00 billion eggs spawned off south-n California in 1954. This indi-ates that approximately 2.3 billion 230,000 tons) of sardines spawned this area, according to the Fish nd Wildlife Service's Southern Pa-fic Fishery Investigations.

The southern California area is ne of two main sardine spawning enters; the other center lies off cen-al Lower California. Estimates of ie numbers of eggs spawned in this outhern center in 1954 are not com-lete; however, spawning was as reat as, or greater than, in 1953, vhen approximately 8.8 billion sar-lines spawned.

The sardine reappearance off south-rn California in 1954 was associated vith an earlier warming of these vaters than in 1952 and 1953. Whether a cause and effect relation-hip exists is unknown, but the occur-ence of such contrasting conditions n 1953 and 1954 affords opportun-ty to test many hypotheses advanced bout sardine movements.

That sardines move north from Mexican waters to make major con-ributions to the California fishery as long been known. Therefore, the ncreased abundance of sardines in 954 is not new but is the resump-ion of a pattern that has been inter-upted for at least two years. Prob-bly the most important single bit of nformation to be found in the 1954 bservations is that sardine spawning off southern California does not de-end on local fish but result from ish moving in from the south.

The location and numbers of sar-line eggs spawned in the spring and ummer of 1955 will be observed rom month to month in an effort to redict the location and number of ish during the fall and winter.

Other participants in the Califor-ia Cooperative Oceanic Fisheries Investigations are Scripps Institution of Oceanography of the University of California, Bureau of Marine Fisheries of the California Department of Fish and Game, Hopkins Marine Station of Stanford University, and California Academy of Sciences. The Marine Research Committee is coordinating the research.

More About GATT

The General Agreement on Tariffs and Trade (or GATT as it has come to be called from its initials) is an international agreement among virtually all the important trading nations of the free world, including the United States.

The GATT is the principal instrument through which the United States cooperates with major trading nations of the free world in an effort to reduce trade barriers. It consists, first, of schedules or lists of "concessions" (i.e., products on which tariffs have been reduced or bound against increase), and second, a code of agreed rules or "general provisions," under which the import and export trade of the participating countries will be conducted. Third, through periodic meetings of representatives of the participating countries, GATT provides a forum for the discussion and settlement of mutual problems concerning international trade.

Thirty-four countries participate in the GATT, including, besides the United States, the countries of the British Commonwealth, most of the coutries of Western Europe, and some Latin American and Asiatic countries. These countries together account for about 80% of the international trade of the whole world.

There have been many important changes in economic conditions since 1948, when the GATT was first put into effect. After more than seven years operation it seemed to many participating countries that the time had come for a thoroughgoing review of the setup's provisions. This review has just been completed in Geneva after several months of intensive negotiations, and various proposed amendments are now being considered and are expected to come into operation after approval by the participating governments. In the United States these are being submitted to Congress for its approval.

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The nationwide campaign, now getg under way, is geared to reach its ak during the period of June 2-11.

Although record stocks of canned na are now available, leaders of the dustry are confident that this high ventory can be substantially reiced during the campaign, since nned tuna fits so well into warm eather menus.

The campaign will be directed toard both the institutional and homeonsumer markets. The industry is lanning the preparation of point-ofle and other merchandising aids for se in encouraging increased conmption of canned tuna.

The Fish and Wildlife Service will aid through special work with institutions, schools, and food trade groups. In addition, informational and educational activities will be increased so as to attract greater consumer attention.

The tuna are available in a number of styles of pack. The solid pack consists of tuna loins packed in oil; the chunk pack, as the name implies, is a pack of chunks in oil; the grated pack is the grated or shredded portion of the tuna loin; the flake pack is the broken or mixed segments of the loin. Many specialty packs are also available, such as "tonno" consisting of solid-meat tuna packed in olive oil; tuna paste, which is excellent for hors d'oevres and canapes; and baby food packs. For the past several years a "dietetic" pack has been put up for those persons who must avoid salt in their diets. Practically all of these styles of pack are available in white meat, light meat, or dark meat. The imported stocks, which come primarily from Japan, are generally packed in brine rather than in oil.

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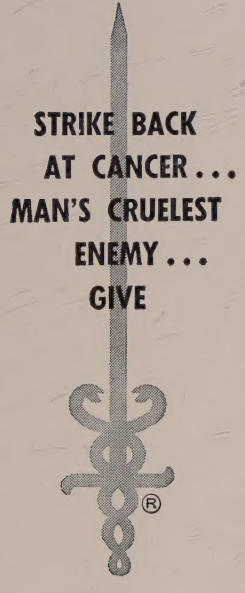
When you give your dollars to the American Cancer Society, you are making an investment that pays off in the saving of human lives. Perhaps the life of one friend.

Perhaps your own life.



American Cancer Society

GENTLEMEN:

I want to help conquer Cancer.

( ) Please send me free information about Cancer.

( ) Enclosed is my contribution of $____ to the Cancer Crusade.

Name_____

Address_____

City_____ Zone____ State_____

(MAIL TO: CANCER, c/o your town's Postmaster)

Second Class Mail
Pan American Fisherman,
P.O. Box 650, Orange, Calif.
Form 3579 Requested

Insuring the Present . . . and the Future

As in the Past . . . So in the Future

All Activities of the American Tunaboat Association

Are Directed to the Improvement and Prosperity

of the Tuna Industry

Wade Ambrose
President

Harold F. Cary
General Manager

AMERICAN TUNABOAT ASSOCIATION

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